

WHAT IS CLAIMED IS:

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1. Material for passive electronic components comprising:

a porous ceramic body comprising particles of green silicon carbide or polygranular graphite, and

a metal filling the porosities of said ceramic body and comprising aluminum, an aluminum alloy, magnesium or a magnesium alloy,

said ceramic body forming about 50 to 90% by volume of said material,

said material being formed by an isotropic composite made of two randomly oriented interpenetrating networks of a ceramic phase and a metallic phase, and having a coefficient of thermal expansion below about $13 \times 10^{-6} \text{ K}^{-1}$ and a density below about 3100 kg.m^{-3} .

2. The material of claim 1, having a coefficient of thermal expansion from 7×10^{-6} to $13 \times 10^{-6} \text{ K}^{-1}$, thermal conductivity higher than $150 \text{ W.m}^{-1} \text{ K}^{-1}$ and a Young's modulus higher than 120 GPa, wherein particles of green silicon carbide comprise from 50 to 75% by volume.

3. The material of claim 1, having a coefficient of expansion from 4×10^{-6} to $10 \times 10^{-6} \cdot K^{-1}$, density below $2300 \text{ kg} \cdot \text{m}^{-3}$, thermal conductivity higher than $100 \text{ W} \cdot \text{m}^{-1} \cdot K^{-1}$ and a Young's modulus below 50 GPa, wherein polygranular graphite comprises from 60 to 90% by volume.

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4. The ^{device}~~material~~ of claim 1, wherein the metal is selected from the group consisting of aluminum alloys A356 and A357.

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